# 中國分化獨產條護與對古學研究國際中心

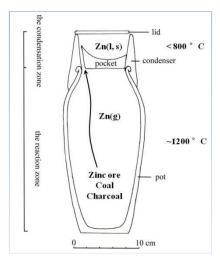
## **ICCHA China Night**

#### **The Rising Scholar Series**

### **Distilling Zinc in China:**

The Technology of Large-Scale Zinc Production in Chongqing During the Ming and Qing Dynasties (AD 1368-1911)

### By Dr ZHOU Wenli (UCL Institute of Archaeology)



Zinc made a relative late appearance in the metallurgical history of China. As a volatile metal, its production required sophisticated distillation installations. This study for the first time presents the analyses, technical interpretation and socio-economic contextualisation of zinc production remains in China, from three Ming sites in Fengdu and one Qing site in Shizhu, Chongqing, Southwest China. Zinc ore, zinc metal, retorts and slag were analysed by optical microscopy, scanning electron microscopy with energy dispersive spectrometry (SEM-EDS), electron probe micro-analyser with wavelength dispersive spectrometry (EPMA-WDS) and X-ray diffractometry (XRD). Following on a detailed technological reconstruction, some differences were found between the zinc distillation technologies in Fengdu and Shizhu, not only in technical efficiency but also in the

organisation of production. These differences can be explained as adaptation of the zinc production for coinage to the different social, political and economic constraints affecting each group of sites. Thus this study offers a first contribution towards a detailed comparative reconstruction of Chinese zinc distillation technology that considers both variations in time and space as well as common elements that characterise Chinese technological style. In addition, the significance of Chinese zinc production is contextualised and discussed with reference to coinage in Ming and Qing China, but also by comparing it to other brass and zinc making technologies in China, India and Europe, and by assessing the influence of Chinese zinc in the international maritime trade.

Zhou Wenli received her BA in conservation science and MSc in archaeometallurgy at School of Archaeology and Museology, Peking University. She just finished her PhD research on this topic at UCL Institute of Archaeology. Her research interests include technology and organisation of metal production (especially zinc and brass), production and consumption of technical ceramics (furnaces, crucible and moulds), and bronze casting technology. She will continue her research in archaeometallurgy at the Institute for the History of Natural Sciences, Chinese Academy of Sciences later this year.

Date and Venue: 5:30pm, Thursday September 27 @ Room209, Institute of Archaeology and followed by wine reception. All Welcome!

INTERNATIONAL CENTRE FOR CHINESE HERITAGE AND ARCHAEOLOGY